Pz-C 598 1890

Clarke, J.M.
Note on Oronura aspectans, Conrad (sp.), the Asaphus diurus, Green.

HARVARD UNIVERSITY

VE RI
TAS

LIBRARY

OF THE

Museum of Comparative Zoology

E Raymond

535

J. F. Whiteaves.

P2-C598

NOTE

ON

ORONURA ASPECTANS, CONRAD (sp.),

THE ASAPHUS DIURUS, GREEN.

By J. M. Clarke.

State Museum
44th An. Rep. 1890.
pp. 105-109

N. Y. State G. An. Rep.
X 1891

MUS. COMP. ZOOL.
LIBRARY
HARVARD
UNIVERSITY

NOTE

ON

CORONURA ASPECTANS, CONRAD (sp.),

THE ASAPHUS DIURUS, GREEN.

By J. M. Clarke.

MUS. COMP. ZOOL.
LIBRARY

HARVARD
UNIVERSITY

NOTE ON CORONURA ASPECTANS, CONRAD (sp.),

The Asaphus diurus, Green.

By J. M. Clarke.

Communicated to the State Geologist December, 1890.

The species *Asaphus aspectans* was founded by Conrad in 1841* upon a fragment of a cephalon consisting of a free cheek, retaining the lensar surface of the ocular node. This specimen was from the Corniferous limestone at Schoharie, N. Y., and was characterized by the great elevation of the eye (represented by Conrad as almost semicylindrical), the broad and entire marginal border and the coarse tuberculation of the surface. Until the publication of Volume VII of the Palæontology of New York (1888) the name had not been regarded of much value, from the very fact of the obscurity and apparent insufficiency of the original specimen. Professor Hall had reproduced in the Fifteenth Annual Report on the State Cabinet of Natural History (p. 88, 1862) Conrad's brief diagnosis and his figure, and in a short note of observations refers to a second specimen, curiously enough almost the duplicate of the original; both of these specimens, left free cheeks, are figured on plate 13 of the volume of the Palæontology of New York referred to.

In the study of the Upper Helderberg trilobites made in the preparation of this work it became evident that the large pygidia, not infrequent at some outcrops of the Corniferous limestone, characterized by rows of conspicuous marginal spines and a crescentic posterior extremity, and which were currently referred to the species described by Professor Hall as *Dalmania Helena*, or that by Mr Meek as *Dalmania Ohioensis*, had possessed a cephalon, the eye and cheek of which must have closely conformed to that described as *Asaphus aspectans*. The evidence, however, that these different parts represented but a single species was rather slender, notwithstanding the fact that so much confidence was there felt of this probability that all these pygidia were referred to Conrad's species. The argument was on this wise: Professor Hall's *D. Helena* was based upon a poorly preserved pygidium from the Falls of the

---

* Fifth Annual Report on the Palæontology of the State of New York, p. 49, plate, fig. 9.

Ohio (see *op. cit.* plate 13, fig. 7), from which all the marginal and terminal spines were lost and the pustulous surface worn away. The original of Mr. Meek's *D. Ohioensis,* from the Corniferous limestone at Marblehead, Ohio, was a pygidium, the surface of which was also worn smooth, but retained the marginal spines. An abundance of these pygidia from Ohio and various localities in New York (especially from the Lime Rock quarries near Le Roy) rendered their specific identity beyond question. In some material from Ohio which had been loaned by Dr. Newberry was a single fragment, comprising nearly one-half of a cephalon, from the Corniferous limestone at Columbus. This retained one very large and greatly elevated eye, and showed agreement with the original of *Asaphus aspectans* in all the features known. There was no other known trilobite in these rocks to which this cephalon could be referred with any confidence of accuracy, and hence it was presumed that this was the cephalon belonging to the pygidia passing under the names of *D. Helena* and *D. Ohioensis.* Its identity with *Asaphus aspectans* was beyond contravention.

Quite recently the State Museum has obtained possession of an entire individual of this species, which has an interesting bearing on the validity of this identification. This fine specimen was secured in the fall of this year by Mr. Albert L. Arey, of Rochester, N. Y., at the quarries at Lime Rock. It consists of two portions, the intaglio retaining the crust, and none of the important parts are missing. All details of structure are well retained, the thinness of the crust showing even the finer tuberculations of the surface. This animal, judging from the dimensions of the pygidium, appears to be of about average size, having a length to the extremity of the horns of the posterior crescent of $5\frac{3}{8}$ inches. To this must be added a fraction due to the slight compression of the posterior portion of the thorax, and the original length of the animal was undoubtedly fully $5\frac{7}{8}$ inches. The character of the cephalon confirms in every respect the identification made in Volume VII. The marginal border is very broad, narrowing into short cheek-spines, and the entire surface of border, cheeks and glabella is coarsely tubercled, The margin itself is regular and uninterrupted, as in *Dalmanites Calypso,* Hall, of the same fauna, and in *D. micrurus,* Green, of the Lower Helderberg; not crenulated as in the Lower Helderberg. *D. pleuroptyx,* Green, the Schoharie grit species, *D. anchiops,* Green, nor spined for its entire extent, as in *D. dentatus,* Barrett, of the Lower Helderberg, nor baculiferous, as in *D. regalis,* Hall, of the Schoharie grit and *D. pygmæus,* Hall, of the Corniferous, nor dentate on its anterior arc as in ODONTOCEPHALUS. The eye-lobes are high, the eyes themselves large and elevated. The anterior lobe of the glabella is low, somewhat pentagonal in outline and its definition from the anterior border unusually indistinct. As in most of the DALMANITES of this fauna the lateral members of the first and second pair of lobes are coalesced not only with each other but to a very considerable degree with the eye-lobes. The lateral extensions of the facial suture lie in deep grooves in their passage over the cheeks. The thorax presents no additional features of importance, except that the segments are considerably produced at their lateral extremities, and terminate in sharp points, without showing well-defined articulating faces.

In this specimen, however, the marginal spines of the pygidium are remarkably short, while usually in the New York specimens they are larger than in those from the Corniferous limestone of Ohio. The terminal spines, also, are relatively quite broad and stout and bear on their outer margins three spinules. As far as can be ascertained there is no evidence of erect spines on the crescentic border as in the allied species *Coronura myrmecophorus*, GREEN, but the structure of the posterior crescent shows how closely this form approximates the latter species.

The structure of Mr. CONRAD's species, *Asaphus aspectans* (which is now to be referred to the genus *Coronura*, proposed in Volume VII of the Palæontology of New York), is established, and it has probably never before happened in the history of discussions upon the trilobites that a species at once so imposing in its proportions and so characteristic of its founa, has been virtually reconstructed from so insignificant a fragrant, with a meager and imperfect description of that.

We believe, however, that CONRAD's term must yield to an earlier one of Dr. GREEN's, *Asaphus diurus*, a name which has never been accepted, from certain imperfections in the original description. This species was proposed in the American Journal of Science and Arts, 1839 (vol. xxxvii, No. 1, p. 40, July), under the title "Description of a New Trilobite." In order to apprehend its value, the essential portion of the description is reproduced:

"Clypeo? costis striatis, tuberculatio; cauda bipartita; corpore depresso.

"The fragments of this Asaph which I have examined, consist of nineteen articulations of the abdomen and tail. *The costal arches of the lateral lobes are very peculiar. They are marked by a shallow groove, or impressed line on their upper surface, studded on each side with quite a* *regular row of bead-like granulations. On each division of the vertebral column, there is but a single row of pustulations. The lunate caudal end is more expanded than in the cognate species, the A. Selenurus, and the concave side of the crescent is more regularly rounded ; the whole animal is much more depressed than that species, and the lateral lobes are much wider in proportion to the middle lobe of the back.*

"There are two specimens of this fine species in the cabinet of William Wagner, Esq., of Philadelphia, both of which were found in Green county, Ohio, in the neighborhood of Xenia. The largest which measures two inches long and two and a half inches wide, is a plaster cast from a weather-beaten natural mould; the other occurs in a grey, sparry argillaceous limestone rock. It is perhaps worthy of remark, that all the specimens of the Asaph with a lunate tail, which I have noticed, were natural moulds, made by the animal in the rock, the shell or body having disappeared."

This description was unaccompanied by any illustrations; that portion, however, that we have underlined is a cogent delineation of the characters of the pygidium of *Dalmanites aspectans.* The fossil is hardly to be mistaken. There are but three species of crescent-tailed trilobites, of the size here indicated, that are now known; *Asaphus* or *Odontocephalus selenurus, Asaphus* or *Dalmanites myrmecophorus* and *Asaphus* or *Dalmanites aspectans.* Of these Dr. Green had himself described two, though the first is usually referred to Eaton, who published it in the same year. They are all members of the same (Corniferous) fauna. In Miller's Catalogue of the American Palæozoic Fossils, the species is referred to the age of the Niagara; Captain Vogdes in his Bibliography considers it of the age of the Hudson river group, but in neither these nor any other American palæozoic fauna, except the Corniferous, is there any trilobite which even remotely suggests the above description.

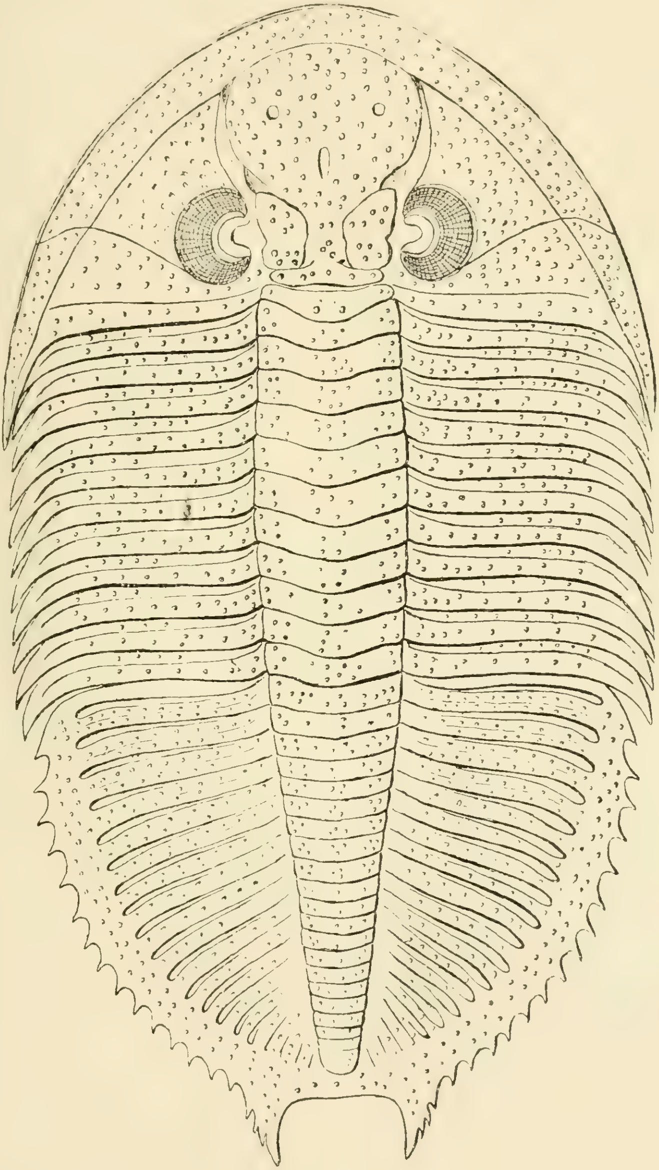
The nineteen articulations of the axis of the pygidium, which perhaps from its unusual size the author considered as "abdomen and tail," the grooving of each pleura by a fine impressed line, on each side of which is a regular row of granules, the form of the posterior crescent and the relative proportions of the axis and lateral lobes are all apparent in the figures given in the Palæontology of New York, Vol. VII, and in that accompanying this paper. In the hope of finding Dr. Green's original specimens, search has been made in the collections of the Wagner Free Institute of Science, at Philadelphia, by the favor of its secretary, Mr. Charles W. Johnson, but the specimens, if extant, are for the time being lost sight of.

Dr. Green evidently made an erroneous citation of the locality of these fossils. The Corniferous limestone does not occur near Xenia, and is not known in Green county, Ohio; but an error of this kind is not altogether surprising. No one's knowledge of the geology of Ohio had then attained this degree of discrimination; of the origin of the specimens the author had no personal knowledge; they had come to him through the hands of a collector, upon the accuracy of whose information it is not necessary, in a critical question, to put full reliance.

EXPLANATION OF PLATE IV.

CORONURA DIURUS, *Green* (*sp.*)

Outline drawing of the only entire individual known.



Coronura diurus, Green.

Bonteus clavatus
pt 403-405

Gaylord
PAMPHLET BINDER
Syracuse, N. Y.
Stockton, Calif.

ERNST MAYR LIBRARY
3 2044 110 320 967

Date Due